



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/462,441	03/20/2000	HANS-JOSEF GIERTZ	PS-12626	5095

7590

09/12/2003

Fay Sharpe Fagan Minnich & McKee LLP
1100 Superior Avenue
Seventh Floor
Cleveland, OH 44114-2518

13

EXAMINER

WACHTEL, ALEXIS A

ART UNIT	PAPER NUMBER
----------	--------------

1764

DATE MAILED: 09/12/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/462,441

Applicant(s)

GIERTZ ET AL.

Examiner

Alexis Wachtel

Art Unit

1764

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 June 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 16-72 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 16-72 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 10. 6) ☐ Other: _____

Detailed Action

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claim 46 is rejected under 35 U.S.C. 102(b) as being anticipated by US 4264263 to Richmond Jr.

Richmond Jr. discloses an apparatus comprising:

With respects to the limitation of claim 46, a device to seal a leveler door opening (12) of a coke oven chamber during top charging of the coking coal, comprising a housing (20) at least partially connectable to the leveler door opening (12), said door at least partially defined by a cross-sectional area of said coke oven chamber, a leveler bar at least partially moveable in said housing (20) and guidable in said leveler door opening (12), said leveler bar (12) including at least two side segments (50,52) and at least one cross segment connecting said two side segments (50,52), said housing (20) provided with a sealing mechanism to at least partially prevent gas from escaping between said housing and said leveler door opening (12), and at least one movable sealing element to at least partially seal an inner cross section of said leveler bar between said side segments (50,52). Examiner notes per Fig.3 that an area between side segments (50,52) is sealed.

Claim Rejections - 35 USC § 103

Art Unit: 1764

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 16,18,19,20,21,22,23,24,27 and 30,31,34,36,38,40,42,44 and 65,66,67,68,69,70,71,72 are rejected under 35 U.S.C. 103(a) as being unpatentable over US 4264263 to Richmond Jr. in view of DE 2364458C3 and US 5925829 to Largione.

Richmond Jr. discloses an apparatus comprising:

With respects to the limitation of claim 16 a device for sealing a leveler door opening of a coke oven chamber during top charging of the coking coal, comprising a housing (20) connectable to the leveler door opening (12), said door opening at least partially defined by a cross-sectional area of said coke oven chamber, a leveler bar (16) guidable in said leveler door opening (12), said leveler bar (16) including at least two side segments (50,52) and at least one cross segment connecting said two side segments (50,52), said housing (20) provided with a sealing mechanism to at least partially seal said cross-sectional area of said leveler door opening (12),

Richmond Jr as set forth above fails to teach per claim 16 a regulatable exhaust fan connected to said housing and a flow measuring mechanism at least partially positioned in said housing, said flow measuring mechanism at least partially controlling regulatable exhaust fan. DE2364458C3 teaches that it is known for leveler

Art Unit: 1764

bar housing to be connected to both a forced draught fan and an exhaust fan. The fans prevent the emission of charging gases through the leveler door opening (See Applicant's Specification for DE2364458C3 disclosure, pp.2, lines 19-35). In view of this teaching it would have been obvious for one of ordinary skill to have included at least one fan connected to the leveler bar housing motivated by the desire to decrease the emission of charging gases. Additionally, in regards to claim 16, Richmond Jr and DE2364458C3 as set forth above fails to teach that a flow measuring means is connected to the leveler bar housing. Laragione et al teaches that flow meters are well known (Abstract). Such flow meters can be used to measure the rate of change of pressure of gas flowing into or out of a closed system (C1/L65-66). Since the exhaust system disclosed by Richmond Jr, and DE2364458C3 operates with a coke oven as a closed system isolated from the environment to prevent the emission of pollution, it would have been obvious for one of ordinary skill to have incorporated a flow measuring means into the leveler bar housing motivated by the desire to provide sensor data to an operator indicating the performance characteristics of the exhaust system as disclosed by Richmond Jr, and DE2364458C3.

With respects to the limitation of claim 18 wherein said leveler bar (16) includes at least two of said cross segments (54) and at least two sealing plates arranged within said housing (20) to seal said leveler bar from above and below over an area between said two cross segments (54) and including a sealing mechanism to at least partially seal said side segments (50,52) of said leveler bar adjacent to said leveler door opening. Richmond Jr teaches the use of sealing rollers (Examiner interprets rollers as

a form of plates) that engage a leveler bar (16) on its top surface as well as both side surfaces. The sealing rollers are not adjacent to the leveler bar door opening (Richmond Jr, Fig.3,4 and 5, C3/L51-68, C4/L1-9). In addition, a counterweighted swing gate (108) is provided to engage the leveler bar on its bottom surface (Richmond Jr, C5/L12-18). Since Richmond Jr teaches that a leveler bar can be surrounded on its top, bottom and side surfaces with sealing mechanisms to prevent any air leaks, it would have been obvious for one of ordinary skill to have further improved the sealing plate housing by positioning the sealing plates adjacent to the leveler bar door opening (12).

With respects to the limitation of claim 19 wherein sealing strips and said sealing plates are provided with press on means (Fig.4).

With respects to the limitation of claim 20 wherein the said sealing plates are held in said housing by a partial vacuum, said partial vacuum pressing sealing plates against said leveler bar (16). (Examiner takes the position that since the sealing plates function as air locks, at least some vacuum is present in the sealing plates vicinity during their operation. Such a vacuum would inherently affect the operation of the sealing plates).

With respects to the limitation of claim 21 wherein said sealing plates are beveled (Richmond Jr, Fig.4, item 122).

With respects to the limitation of claim 22, **the prior art as set forth above fails to teach:** a plurality of said sealing plates are included and a plurality of sealing strips being arranged one behind the other in an axial direction, said axial direction defining a thrust direction for said leveler bar. However, since the sealing plates and sealing strips

(taken by examiner to be the same) operate as airlocks to prevent emissions of harmful gases during a coke pushing session, it would have been obvious for one of ordinary skill to have duplicated the airlock effect of the sealing plates/sealing strips by using additional sealing plates/sealing strips oriented one after another in an axial direction, said axial direction defining a thrust direction of the leveler bar. *St.Regis Paper Co. v. Bemis Co., Inc.*, 193 USPQ 8,11 (7th Cir. 1977).

With respects to the limitation of claim 23 wherein said housing at least partially surrounds said sealing plates and said side segments (50,52) of said leveler bar.

With respects to the limitation of claim 24 a device for sealing a leveler door opening of a coke oven chamber (10) during top charging of the coking coal comprising a housing (20) connectable to the leveler door opening (12) so as to form a seal, said door opening defined by a cross-sectional area of said coke oven chamber, a leveler bar (16) guided into said leveler door opening (12) including at least two side segments (50,52) and at least one cross segment (54) connecting said two side segments (50,52), said housing (20) provided with a sealing mechanism to at least partially seal said cross-sectional area of said leveler door opening(C3/L29-50), and at least one movable sealing element to at least partially seal an inner cross section of said leveler bar between said side segments (50,52), said at least one movable sealing element includes at least one rotary lock (Fig.4), at least one cell wheel, at least one movable roller (Fig.4) and combinations thereof.

With respects to the limitation of claim 27 whereby at least one sealing plate being arranged in said housing (20).

With respects to the limitation of claim 30 a device to seal a leveler door opening of a coke oven chamber (10) during top charging of the coking coal comprising a housing (20) at least partially connectable to the leveler door opening (12), said door opening at least partially defined by a cross-sectional area of said coke oven chamber (C3/L29-50), a leveler bar (16) at least partially moveable in said housing (20) and guidable in said leveler door opening (12), said leveler bar (16) including at least two side segments (50,52) and at least one cross segment connecting said two side segments (50,52), said housing (20) provided with a sealing mechanism to at least partially prevent gas from escaping between said housing and said leveler door opening (12).

The prior art as set forth above fails to teach a regulatable exhaust fan connected to said housing. DE2364458C3 teaches that it is known for leveler bar housing to be connected to both a forced draught fan and an exhaust fan. The fans prevent the emission of charging gases through the leveler door opening (See Applicant's Specification for DE2364458C3 disclosure, pp.2, lines 19-35). In view of this teaching it would have been obvious for one of ordinary skill to have included at least one fan connected to the leveler bar housing motivated by the desire to decrease the emission of charging gases. Additionally, in regards to claim 30, Richmond Jr and DE2364458C3 as set forth above fails to teach a flow measuring mechanism measuring gas flow primarily entering said housing from said coke oven chamber, said flow measuring mechanism at least partially controlling said regulatable exhaust fan to control a flowrate of a gas from said housing so as to substantially reduce the flow of

Art Unit: 1764

gas from said coke oven chamber into housing. Laragione et al teaches that flow meters are well known (Abstract). Such flow meters can be used to measure the rate of change of pressure of gas flowing into or out of a closed system (C1/L65-66). Since the exhaust system disclosed by Richmond Jr, and DE2364458C3 operates with a coke oven as a closed system isolated from the environment to prevent the emission of pollution, it would have been obvious for one of ordinary skill to have incorporated a flow measuring means into the leveler bar housing motivated by the desire to provide sensor data to an operator indicating the performance characteristics of the exhaust system as disclosed by Richmond Jr, and DE2364458C3. Examiner notes that such a flow meter is capable of measuring and providing data to control a flowrate of gas from said housing so as to substantially reduce the flow of gas from said coke oven chamber into housing.

With respects to the limitation of claim 31 wherein said housing (20) includes a first end and a second end, said first end at least partially connectable to the leveler door opening and said second end telescopically receiving at least a portion of said leveler arm. **The prior art as set forth above fails to teach** that said flow measuring mechanism at least partially controls said regulatable exhaust fan to control said flowrate of a gas from said housing and substantially preventing gas flow out of said end of said housing. Laragione et al teaches that flow meters are well known (Abstract). Such flow meters can be used to measure the rate of change of pressure of gas flowing into or out of a closed system (C1/L65-66). Since the exhaust system disclosed by Richmond Jr, and DE2364458C3 operates with a coke oven as a closed system

Art Unit: 1764

isolated from the environment to prevent the emission of pollution, it would have been obvious for one of ordinary skill to have incorporated a flow measuring means into the leveler bar housing motivated by the desire to provide sensor data to an operator indicating the performance characteristics of the exhaust system as disclosed by Richmond Jr, and DE2364458C3. Examiner notes that such a flow meter is capable of measuring and providing data to control a flowrate of gas from said housing.

With respects to the limitation of claim 34 the prior art as set forth above fails to teach that said leveler bar includes at least two of said cross segments (54) and at least two sealing plates (Fig.4) arranged within said housing to seal said leveler bar (16) from above and below over an area between said two cross segments (54). **The prior art as set forth above fails to teach** that said leveler bar includes a sealing mechanism to at least partially seal said side segments (50,52) of said leveler bar positioned at least closely adjacent said leveler door opening. Richmond Jr teaches the use of sealing rollers (Examiner interprets rollers as a form of plates) that engage a leveler bar on its top surface as well as both side surfaces. The sealing rollers are not adjacent to the leveler bar door opening (Richmond Jr , Fig.3,4 and 5, C3/L51-68, C4/L1-9). In addition, a counterweighted swing gate (108) is provided to engage the leveler bar on its bottom surface (Richmond Jr, C5/L12-18). Since Richmond Jr teaches that a leveler bar can be surrounded on its top, bottom and side surfaces with sealing mechanisms to prevent any air leaks, it would have been obvious for one of ordinary skill to have further improved the sealing plate housing by positioning the sealing plates adjacent to the leveler bar door opening.

With respects to the limitation of claim 36 wherein a seal mechanism is included to at least partially form a leveler seal between an outer surface of said leveler bar and an interior surface of said housing (20), said leveler seal including sealing strips, sealing plates and combinations thereof (Fig.4).

With respects to the limitation of claim 38 wherein said leveler seal is provided with press-on means (Fig.4).

With respects to the limitation of claim 40 wherein said sealing plates (Fig.4) are at least partially held in said housing by a partial vacuum at least partially causing said sealing plates to press against leveler bar (16). (Examiner takes the position that since the sealing plates function as air locks, at least some vacuum is present in the sealing plates vicinity during their operation. Such a vacuum would inherently affect the operation of the sealing plates).

With respects to the limitation of claim 42 wherein said sealing plates are at least partially beveled (Richmond Jr, Fig.4, item 122).

With respects to the limitation of claim 44, **the prior art fail to teach** a plurality of said sealing plates and a plurality of sealing strips are arranged one behind the other in an axial direction, said axial direction defining a thrust direction for said leveler bar (16). However, since the sealing plates and sealing strips (taken by examiner to be the same) operate as airlocks to prevent emissions of harmful gases during a coke pushing session, it would have been obvious for one of ordinary skill to have duplicated the airlock effect of the sealing plates/sealing strips by using additional sealing plates/sealing strips oriented one after another in an axial direction, said axial direction

Art Unit: 1764

defining a thrust direction of the leveler bar. *St.Regis Paper Co. v. Bemis Co., Inc.*, 193 USPQ 8,11 (7th Cir. 1977).

With respects to the limitation of claim 65 a method for sealing a leveler door opening of a coke oven chamber during the leveling process comprising:

- a. providing a housing at least partially connectable to the leveler door opening, said door opening at least partially defined by a cross-sectional area of said coke oven chamber (Col 2, lines 52-68);
- b. providing a leveler bar (Col 2, lines 52-68);
- c. moving and at least partially guiding said leveler bar in said housing, said leveler bar movable into said leveler door opening (Col 2, lines 52-68).

The prior art as set forth above fails to teach at least partially exhausting a gas from said housing by at least partially regulating a flow of exhausted gas based at least partially upon a measured flow of gas in an area of the leveler door opening, a rate of exhausting of gas being selected to substantially reduce gas flow at the measuring location. DE2364458C3 teaches that it is known for leveler bar housing to be connected to both a forced draught fan and an exhaust fan. The fans prevent the emission of charging gases through the leveler door opening (See Applicant's Specification for DE2364458C3 disclosure, pp.2, lines 19-35). In view of this teaching it would have been obvious for one of ordinary skill to have included at least one fan connected to the leveler bar housing motivated by the desire to decrease the emission of charging gases. Additionally, in regards to claim 65, Richmond Jr and DE2364458C3 as set forth above fails to teach a flow measuring mechanism measuring gas flow primarily entering said

Art Unit: 1764

housing from said coke oven chamber, said flow measuring mechanism at least partially controlling said regulatable exhaust fan to control a flowrate of a gas from said housing so as to substantially reduce the flow of gas from said coke oven chamber into housing. Laragione et al teaches that flow meters are well known (Abstract). Such flow meters can be used to measure the rate of change of pressure of gas flowing into or out of a closed system (C1/L65-66). Since the exhaust system disclosed by Richmond Jr, and DE2364458C3 operates with a coke oven as a closed system isolated from the environment to prevent the emission of pollution, it would have been obvious for one of ordinary skill to have incorporated a flow measuring means into the leveler bar housing motivated by the desire to provide sensor data to an operator indicating the performance characteristics of the exhaust system as disclosed by Richmond Jr, and DE2364458C3. Examiner notes that such a flow meter is capable of measuring and providing data to control a flowrate of gas from said housing so as to substantially reduce the flow of gas from said coke oven chamber into housing.

With respects to the limitation of claim 66 the method including the step of at least partially forming a seal between said leveler door opening and said leveler bar (Col 2, lines 64-65).

With respects to the limitation of claim 67 wherein said leveler bar includes at least two side segments (50,52) and at least one cross segment connecting two side segments (50,52).

With respects to the limitation of claim 68 the method including the step of providing a seal to at least partially prevent gas from escaping between said housing

Art Unit: 1764

and said leveler door opening (Col 2, lines 64-65).

With respects to the limitation of claim 69 **the prior art as set forth above fail to teach** the method wherein said step of measuring flow of gas at least partially located in said housing and measuring gas flow primarily entering said housing from said coke oven chamber. DE2364458C3 teaches that it is known for leveler bar housing to be connected to both a forced draught fan and an exhaust fan. The fans prevent the emission of charging gases through the leveler door opening (See Applicant's Specification for DE2364458C3 disclosure, pp.2, lines 19-35). In view of this teaching it would have been obvious for one of ordinary skill to have included at least one fan connected to the leveler bar housing motivated by the desire to decrease the emission of charging gases. Additionally, in regards to claim 65, Richmond Jr and DE2364458C3 as set forth above fails to teach a flow measuring mechanism measuring gas flow primarily entering said housing from said coke oven chamber, said flow measuring mechanism at least partially controlling said regulatable exhaust fan to control a flowrate of a gas from said housing so as to substantially reduce the flow of gas from said coke oven chamber into housing. Laragione et al teaches that flow meters are well known (Abstract). Such flow meters can be used to measure the rate of change of pressure of gas flowing into or out of a closed system (C1/L65-66). Since the exhaust system disclosed by Richmond Jr, and DE2364458C3 operates with a coke oven as a closed system isolated from the environment to prevent the emission of pollution, it would have been obvious for one of ordinary skill to have incorporated a flow measuring means into the leveler bar housing motivated by the desire to provide sensor data to an operator

Art Unit: 1764

indicating the performance characteristics of the exhaust system as disclosed by Richmond Jr, and DE2364458C3. Examiner notes that such a flow meter is capable of measuring and providing data to control a flowrate of gas from said housing so as to substantially reduce the flow of gas from said coke oven chamber into housing.

With respects to the limitation of claim 70 the method wherein said housing includes a first end and a second end, said first end at least partially connectable to the leveler door opening and said second end telescopically receiving at least a portion of said leveler arm (Col 2, lines 52-68) said rate of exhausted gas from said housing and substantially preventing a gas flow out said end of said housing.

With respects to the limitation of claim 71 **the prior art as set forth above fails to teach** the method including the step of at least partially directing said exhausted gas fan into an adjacent coke oven chamber.

With respects to the limitation of claim 72 wherein said seal includes at least one sealing plate (Fig.4), at least one sealing strip, and combinations thereof, said seal at least partially arranged within said housing to seal said leveler bar (16) from above and below at least a portion of said leveler bar.

5. Claims 17 and 32,33,35,37,39,41,43 are rejected under 35 U.S.C. 103(a) as being unpatentable over US 4264263 to Richmond Jr in view of DE 2364458C3 and US 5925829 to Largione in view of US 5114542 to Childress et al.

With respects to the limitation of claims 17 **the prior art as set forth above fails to teach** that said exhaust fan includes an outlet connected to an adjacent coke oven chamber. Childress et al teaches the concept that a battery of coking ovens can be

Art Unit: 1764

connected by a common flue gas ducting system running along the top of the coking battery (C2/L24-39). Since the references as set forth above and Childress et al are commonly directed to solving the problem of coke oven exhaust problems, it would have been obvious for one of ordinary skill in the art to have pumped exhaust gas from an immediate coke oven chamber to an adjacent, operating coke chamber motivated by the desire to prevent the emission of toxic gases into the atmosphere.

With respects to the limitation of claim 32 **the prior art as set forth above fails to teach** said regulatable exhaust fan at least partially directed gas into an adjacent coke oven chamber. Childress et al teaches the concept that a battery of coking ovens can be connected by a common flue gas ducting system running along the top of the coking battery (C2/L24-39). Since the references as set forth above and Childress et al are commonly directed to solving the problem of coke oven exhaust problems, it would have been obvious for one of ordinary skill in the art to have pumped exhaust gas from an immediate coke oven chamber to an adjacent, operating coke chamber motivated by the desire to prevent the emission of toxic gases into the atmosphere.

With respects to the limitation of claim 33 **the prior art as set forth above fails to teach** said regulatable exhaust fan at least partially directed gas into an adjacent coke oven chamber. Childress et al teaches the concept that a battery of coking ovens can be connected by a common flue gas ducting system running along the top of the coking battery (C2/L24-39). Since the references as set forth above and Childress et al are commonly directed to solving the problem of coke oven exhaust problems, it would have been obvious for one of ordinary skill in the art to have pumped exhaust gas from

Art Unit: 1764

an immediate coke oven chamber to an adjacent, operating coke chamber motivated by the desire to prevent the emission of toxic gases into the atmosphere.

With respects to the limitation of claim 35 wherein said leveler bar includes at least two of said cross segments (54) and at least two sealing plates arranged within said housing (20) to seal said leveler bar (16) from above and below over an area between said two cross segments (54), **the prior art as set forth above fails to teach** that said leveler bar includes a sealing mechanism to at least partially seal said side segments (50,52) of said leveler bar positioned at least closely adjacent said leveler door opening. Richmond Jr teaches the use of sealing rollers (Examiner interprets rollers as a form of plates) that engage a leveler bar on its top surface as well as both side surfaces. The sealing rollers are not adjacent to the leveler bar door opening (Richmond Jr , Fig.3,4 and 5, C3/L51-68, C4/L1-9). In addition, a counterweighted swing gate (108) is provided to engage the leveler bar on its bottom surface (Richmond Jr, C5/L12-18). Since Richmond Jr teaches that a leveler bar can be surrounded on its top, bottom and side surfaces with sealing mechanisms to prevent any air leaks, it would have been obvious for one of ordinary skill to have further improved the sealing plate housing by positioning the sealing plates adjacent to the leveler bar door opening.

With respects to the limitation of claim 37 wherein said seal includes at least partially forms a leveler seal between an outer surface of said leveler bar and an interior surface of said housing, said leveler seal including sealing strips, sealing plates and combinations thereof

With respects to the limitation of claim 39 wherein said leveler seal is provided

Art Unit: 1764

with press on means (Fig.4).

With respects to the limitation of claim 41 wherein said sealing plates are at least partially held in said housing by a partial vacuum at least partially causing said sealing plates to press against leveler bar. (Examiner takes the position that since the sealing plates function as air locks, at least some vacuum is present in the sealing plates vicinity during their operation. Such a vacuum would inherently affect the operation of the sealing plates).

With respects to the limitation of claim 43 wherein said sealing plates are at least partially beveled (Richmond Jr, Fig.4, item 122).

6. Claims 24, and 47,49,50,51,54,56,58,60,62,64 are rejected under 35 U.S.C. 103(a) as being unpatentable over US 4264263 to Richmond Jr in view of US 3,859,066 to Trutzchler.

With respects to the limitation of claim 24 a device for sealing a leveler door opening of a coke oven chamber (10) during top charging of the coking coal, comprising a housing (20) connectable to the leveler door opening (12) so as to form a seal, said door opening (12) defined by a cross-sectional area of said coke oven chamber, a leveler bar guided into said leveler door opening (12) including at least two side segments (50,52) and at least one cross segment connecting said two side segments (50,52), said housing (20) provided with a sealing mechanism to at least partially seal said cross-sectional area of said leveler door opening (12), and at least one movable sealing element (Fig.4) to at least partially seal an inner cross section of said leveler bar between said side segments (50,52), said at least one movable sealing element

Art Unit: 1764

includes at least one rotary lock (Fig.4), at least one cell wheel, at least one movable roller and combinations thereof.

With respects to the limitation of claim 47 wherein said at least one movable sealing element includes at least one rotary lock (Fig.4), at least one cell wheel, at least one movable roller and combinations thereof.

With respects to the limitation of claim 49 wherein a plurality of sealing elements are included (Fig.4).

With respects to the limitation of claim 50 wherein said at least one rotary lock (Fig.4) is hingably connected to said housing.

With respects to the limitation of claim 51 wherein said at least one rotary lock (Fig.4) is hingably connected to said housing.

With respects to the limitation of claim 54 wherein said leveler bar includes at least two of said cross segments (54) and at least two sealing plates (Fig.4) arranged within said housing (20) to seal said leveler bar from above and below over an area between said two cross segments (54). **The prior art as set forth above fails to teach** that said leveler bar includes a sealing mechanism to at least partially seal said side segments (50,52) of said leveler bar positioned at least closely adjacent to said leveler door opening. Richmond Jr teaches the use of sealing rollers (Examiner interprets rollers as a form of plates) that engage a leveler bar on its top surface as well as both side surfaces. The sealing rollers are not adjacent to the leveler bar door opening (Richmond Jr , Fig.3,4 and 5, C3/L51-68, C4/L1-9). In addition, a counterweighted swing gate (108) is provided to engage the leveler bar on its bottom surface (Richmond

Art Unit: 1764

Jr, C5/L12-18). Since Richmond Jr teaches that a leveler bar can be surrounded on its top, bottom and side surfaces with sealing mechanisms to prevent any air leaks, it would have been obvious for one of ordinary skill to have further improved the sealing plate housing (20) by positioning the sealing plates adjacent to the leveler bar door opening (12).

With respects to the limitation of claim 56 wherein a seal mechanism is included to at least partially form a leveler seal between and outer surface of said leveler bar and an interior surface of said housing, said leveler seal including sealing strips, sealing plates and combinations thereof (Fig.4).

With respects to the limitation of claim 58 wherein said leveler seal is provided with press-on means (Fig.4).

With respects to the limitation of claim 60 wherein said sealing plates are at least partially held in said housing (20) by a partial vacuum at least partially causing said sealing plates to press against said leveler bar. (Examiner takes the position that since the sealing plates function as air locks, at least some vacuum is present in the sealing plates vicinity during their operation. Such a vacuum would inherently affect the operation of the sealing plates).

With respects to the limitation of claim 62 wherein said sealing plates are at least partially beveled (Richmond Jr, Fig.4, item 122).

With respects to the limitation of claim 64, **the prior art as set forth above fails to teach** a plurality of said sealing plates and a plurality of sealing strips are arranged one behind the other in an axial direction, said axial direction defining a thrust direction

Art Unit: 1764

for said leveler bar. However, since the sealing plates and sealing strips (taken by examiner to be the same) operate as airlocks to prevent emissions of harmful gases during a coke pushing session, it would have been obvious for one of ordinary skill to have duplicated the airlock effect of the sealing plates/sealing strips by using additional sealing plates/sealing strips oriented one after another in an axial direction, said axial direction defining a thrust direction of the leveler bar. *St.Regis Paper Co. v. Bemis Co., Inc.*, 193 USPQ 8,11 (7th Cir. 1977).

7. Claims 48,53,55,57,59,61,63 are rejected under 35 U.S.C. 103(a) as being unpatentable over US 4264263 to Richmond Jr.

With respects to the limitation of claim 48 the prior art as set forth above fails to teach a plurality of sealing elements are included.

With respects to the limitation of claim 53 wherein said leveler bar includes at least two of said cross segments (54) and at least two sealing plates arranged within said housing (20) to seal said leveler bar from above and below over an area between said two cross segments (54). **The prior art as set forth above fails to teach** that said leveler bar including a sealing mechanism to at least partially seal said side segments (50,52) of said leveler bar positioned at least closely adjacent to said leveler door opening. Richmond Jr teaches the use of sealing rollers (Examiner interprets rollers as a form of plates) that engage a leveler bar on its top surface as well as both side surfaces. The sealing rollers are not adjacent to the leveler bar door opening (Richmond Jr , Fig.3,4 and 5, C3/L51-68, C4/L1-9). In addition, a counterweighted swing gate (108) is provided to engage the leveler bar on its bottom surface (Richmond

Jr, C5/L12-18). Since Richmond Jr teaches that a leveler bar can be surrounded on its top, bottom and side surfaces with sealing mechanisms to prevent any air leaks, it would have been obvious for one of ordinary skill to have further improved the sealing plate housing (20) by positioning the sealing plates adjacent to the leveler bar door opening.

With respects to the limitation of claim 55 wherein a seal mechanism (Fig.4) is included to at least partially form a leveler seal between an outer surface of said leveler bar and an interior surface of said housing (20), said leveler seal including sealing strips, sealing plates and combinations thereof.

With respects to the limitation of claim 57 wherein said leveler seal is provided with press-on means (Fig.4).

With respects to the limitation of claim 59 wherein said sealing plates are at least partially held in said housing by a partial vacuum at least partially causing said sealing plates to press against said leveler bar. (Examiner takes the position that since the sealing plates function as air locks, at least some vacuum is present in the sealing plates vicinity during their operation. Such a vacuum would inherently affect the operation of the sealing plates).

With respects to the limitation of claim 61 wherein said sealing plates are at least partially beveled (Richmond Jr, Fig.4, item 122).

With respects to the limitation of claim 63 the **prior art as set forth above fails to teach** that a plurality of said sealing plates and a plurality of sealing strips are arranged one behind the other in an axial direction, said axial direction defining a thrust

Art Unit: 1764

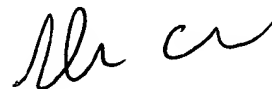
direction for said leveler bar. However, since the sealing plates and sealing strips (taken by examiner to be the same) operate as airlocks to prevent emissions of harmful gases during a coke pushing session, it would have been obvious for one of ordinary skill to have duplicated the airlock effect of the sealing plates/sealing strips by using additional sealing plates/sealing strips oriented one after another in an axial direction, said axial direction defining a thrust direction of the leveler bar. *St. Regis Paper Co. v. Bemis Co., Inc.*, 193 USPQ 8,11 (7th Cir. 1977).

Conclusion

8. Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Alex Wachtel, whose number is (703)-306-0320. The Examiner can normally be reached Mondays-Fridays from 10:30am to 6:30pm.

If attempts to reach the Examiner by telephone are unsuccessful and the matter is urgent, the Examiner's supervisor, Mr. Glenn Caldarola can be reached at (703) 308-6824. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9310 for regular communications and (703) 872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.



Glenn Caldarola
Supervisory Patent Examiner
Technology Center 1700